

PCT09

ATT - 02 /27 /2002

RAW SEQUENCE LISTING

3 <110 - APPLICANT: POLYMEROPOULOUS, MIHAEL

PATENT APPLICATION: US/09/446,628

DATE: 02/27/2002

TIME: 13:28:32

Input Set : A:\164334.app

Output Set: N:\CRF3\02272002\I446628.raw

```
LAVEDAN, CHRISTIAN
      4
              LEROY, ELISABETH
              NUSSBAUM ROBERT
              JOHNSON, WILLIAM
              DUVOISIN. ROGER
      ×
     10 <120 - TITLE OF INVENTION: CLONING OF A GENE MUTATION FOR PARKINSON'S DISEASE
     12 <130 - FILE REFERENCE: 31978-164334
     14 - 140 - CURRENT APPLICATION NUMBER: 09/446,628
     15 - 141 - CURRENT FILING DATE: 1998-06-25
     1' -160 - NUMBER OF SEQ ID NOS: 25
     19 (170 - SOFTWARE: Patentin Vor. 2.1
     21 -210 - SEQ ID NO: 1
     22 (211) LENGTH: 216
     23 (212> TYPE: DNA
     24 - 213 - ORGANISM: Homo sapiens
     26 -(220 ≥ FEATURE:
     27 - 1221 > NAME/KEY: modified_base
     28 <222> LOCATION: (133)
     29 < 223 \times 0THER INFORMATION: a, t, c, g, other or unknown
     31 <220 > FEATURE:
     32 -(221) NAME/KEY, CDS
     33 (222) LOCATION: (56)..(97)
     35 <400> SEQUENCE: 1
     36 qctaatcage aatttaagge tagettgaga ettatgtett gaatttgttt tigta gge
     37
                                                                         Gly
     38
                                                                           1
                                                                               107
     40 f.cc aaa acc aag gag gga gtg gtg cat ggt gtg aca aca ggtaagetee
     41 Ser Lys Thr Lys Glu Gly Val Val His Gly Val Thr Thr
     41
W--> 44 attgtgetta tatcaaagat gatatntaaa gtatetagtg attagtgtgg eecagtatea 167
                                                                               216
     4n agaitectat gaaattgtaa aacaatcact gagcatctaa gaacatatc
     49 < 210 > SEQ ID NO: 2
     50 <211: LENGTH: 22
     51 -: 212> TYPE: DNA
     52 <213> ORGANISM: Artificial Sequence
     54 < 220 < \text{FEATURE}:
     55 + 223: OTHER INFORMATION: Description of Artificial Sequence: Primer
     57 + 4000 \cdot \text{SEQUENCE: } 2
                                                                               22
     58 gotaatcage aatttagget ag
     61 -210> SEQ ID NO: 3
     62 <211> LENGTH: 21
     63 <212> TYPE: DNA
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64 <213 - ORGANISM: Artificial Sequence
66 <2200 FEATURE:
67 (223) OTHER INFORMATION: Description of Artificial Sequence: Primer
64 -:400: SEQUENCE: 3
                                                                      21
70 etatacaaga atetacgagt e
73 -: 210: SEQ ID NO: 4
74 -: 211: LENGTH: 393
75 (212) TYPE: PRT
7m (213) ORGANISM: Homo sapiens
78 -: 400: SEQUENCE: 4
79 Met Glu Thr Ala Ser Pro Val Ala Leu Pro His Glu Met Glu Thr Leu
                   5
                                        10
82 Tyr Ser Gly Leu Tyr Leu Glu Ser Glu Arg Leu Tyr Ser Ala Leu Ala
               20
                                    25
H \prec
85 Leu Tyr Ser Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu Ala Leu
                                4.0
                                                    45
8 h
           3.5
88 Ala Ala Leu Ala Ala Leu Ala Gly Leu Leu Tyr Ser Thr His Arg Leu
84
                                                60
91 Tyr Ser Gly Leu Ash Gly Leu Tyr Val Ala Leu Ala Leu Ala Gly Leu
                        70
                                            75
94 Ala Leu Ala Ala Leu Ala Gly Leu Tyr Leu Tyr Ser Thr His Arg Leu
                                        90
97 Tyr Ser Gly Leu Gly Leu Tyr Val Ala Leu Leu Glu Thr Tyr Arg Val
                                   105
              100
100 Ala Leu Gly Leu Tyr Ser Glu Arg Leu Tyr Ser Thr His Arg Leu Tyr
           115
                                120
                                                    125
103 Ser Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu His Ile Ser Gly
                            1.35
       130
106 Leu Tyr Val Ala Leu Ala Leu Ala Thr His Arg Val Ala Leu Ala Leu
                                            155
                        150
107 145
109 Ala Gly Leu Leu Tyr Ser Thr His Arg Leu Tyr Ser Gly Leu Gly Leu
                                        170
                    165
112 Asn Val Ala Leu Thr His Arg Ala Ser Asn Val Ala Leu Gly Leu Tyr
                                    185
                180
1.1.3
115 Gly Leu Tyr Ala Leu Ala Val Ala Leu Val Ala Leu Thr His Arg Gly
                                                     205
                                200
116
            195
118 Leu Tyr Val Ala Leu Thr His Arg Ala Leu Ala Val Ala Leu Ala Leu
                            215
       210
119
121 Ala Gly Leu Asn Leu Tyr Ser Thr His Arg Val Ala Leu Gly Leu Gly
                                             235
                        230
124 Leu Tyr Ala Leu Ala Gly Leu Tyr Ser Glu Arg Ile Leu Glu Ala Leu
                    245
                                        250
127 Ala Ala Leu Ala Ala Leu Ala Thr His Arg Gly Leu Tyr Pro His Glu
                260
                                    265
128
130 Val Ala Leu Leu Tyr Ser Leu Tyr Ser Ala Ser Pro Gly Leu Asn Leu
131
           275
                                280
                                                     285
133 Glu Gly Leu Tyr Leu Tyr Ser Ala Ser Asn Gly Leu Gly Leu Gly Leu
                            295
      290
136 Tyr Ala Leu Ala Pro Arg Gly Leu Asn Gly Leu Gly Leu Tyr Ile Leu
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	305					310					315				_	320
139	Glu	Leu	Glu	Gly		Ala	Ser	Pro	Met		Ihr	Pro	Arg	Val		L⊷in
$14 \circ$					325					330					335	
142	Ala	ser	Pro	Pro	Arg	Ala	Ser	Pro	Ala	Ser	Asn	Gly	Leu	Ala	Leu	Aìa
1.4 $^{\circ}$				340					345					350		
145	Thr	Tyr	Arg	Gly	Leu	Met	Glu	Thr	Pro	Arg	Ser	Glu	Arg	Gly	Leu	Gly
14 n			355					360					365			
148	Leiu	Gly	Leu	Tyr	Thr	Tyr	Arg	Gly	Leu	Asn	Ala	Ser	Pro	Thr	Tyr	Arg
144		370		•		•	375	-				380				
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165				20					25					30	_	
167	Leu	Tyr	Ser	Gly	Leu	Gly	Leu	туг	Val	Ala	Leu	Val	Ala	Leu	Ala	Leu
168			35					4 ()					45			
170	Ala	Ala	Leu	Ala	Ala	Leu	Ala	$\operatorname{Gl}_T^{\omega}$	Leu	Leu	Tyr	ser	Thr	His	Arg	Leu
171		50					55					60				
174	$\Gamma \cdot \Gamma$	Ser	Gly	Leu	Asn	Gly	Leu	Tyr	Val	Ala	Leu	Ala	Leu	Ala	Glγ	[+317
174	h 5					70					75					3 t)
176	Ala	Leu	Ala	Ala	Leu	Ala	Gly	Leu	Tyr	Leu	Tyr	Ser	Thr	His	Arg	Leu
177					85					90					95	
179	$T \vee r$	Ser	Gly	Leu	Gly	Leu	Tyr	Val	Ala	Leu	Leu	Glu	Thr	Гуr	Arg	Val
180	•		-	100					105					110		
182	Ala	Leu	Gly	Leu	Tyr	Ser	Glu	Arg	Leu	Tyr	Ser	Thr	His	Arg	Leu	Tyr
183			115		•			120		•			125			
	Ser	Glv	Leu	Glv	Leu	Tvr	Val	Ala	Leu	Val	Ala	Leu	His	Ile	Ser	Gly
186		130				1	135					140				-
	Len		Val	Ala	I.⇔11	Thr		Ara	Thr	His	Ara	Val	Ala	Leu	Ala	Leu
	145	- 1 -				150)			155					160
		GLV	Leu	T.eu	Tur		Thr	His	Ara	Leu		Ser	Glv	Leu	Glv	Leu
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195	VOII		AId						185							
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204		_		_		230	_	-		a	235	- 1		.7.3	2.1	240
	Leu	Tyr	Ala	Leu		GIY	Leu	lyr	Ala		Asn	He	Lei⊓	Glu		Leu
207					245		_			250					255	~ 7
209	Ala	Ala	Leu	Ala	Ala	Leu	Ala	Thr	His	Arg	Gly	Leu	Туr	Pro	His	G1u

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260 265 210 212 Val Ala Leu Leu Tyr Ser Leu Tyr Ser Ala Ser Pro Gly Leu Asn Met 213 275 285 280 215 Glu Thr Gly Leu Tyr Leu Tyr Ser Gly Leu Tyr Gly Leu Gly Leu Gly 300 295 #18 Leu Tyr Thr Tyr Arg Pro Arg Gly Leu Asn Gly Leu Gly Leu Tyr Ile 310 315 221 Leu Glu Leu Glu Gly Leu Ala Ser Pro Met Glu Thr Pro Arg Val Ala 325 330 124 Leu Ala Ser Pro Pro Arg Ser Glu Arg Ser Glu Arg Gly Leu Ala Leu 345 227 Ala Thr Tyr Arg Gly Leu Met Glu Thr Pro Arg Ser Glu Arg Gly Leu J28 355 360 230 Gly Leu Gly Leu Tyr Thr Tyr Arg Gly Leu Asn Ala Ser Pro Thr Tyr .331 370 375 133 Arg Gly Leu Pro Arg Gly Leu Ala Leu Ala <u> 1</u>34 385 390 237 <210 · SEQ ID NO: 6 238 <21L LENGTH: 362 239 <212 - TYPE: PRT 240 <213 · ORGANISM: Bos taurus 242 <400 SEQUENCE: 6 243 Met Glu Thr Ala Ser Pro Val Ala Leu Pro His Glu Met Glu Ihr Leu 10 246 Tyr Ser Gly Leu Tyr Leu Glu Ser Glu Arg Met Glu Thr Ala Leu Ala 247 20 25 249 Leu Tyr Ser Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu Ala Leu 250 35 40 252 Ala Ala Leu Ala Ala Leu Ala Gly Leu Leu Tyr Ser Thr His Arg Leu 253 50 55 255 Tyr Ser Gly Lou Ash Gly Leu Tyr Val Ala Leu Thr His Arg Gly Leu 7() 75 258 Ala Leu Ala Ala Leu Ala Gly Leu Leu Tyr Ser Thr His Arg Leu Tyr 90 85 261 Ser Gly Leu Gly Leu Tyr Val Ala Leu Leu Glu Thr Tyr Arg Val Ala 105 262 100 264 Leu Gly Leu Tyr Ser Glu Arg Leu Tyr Ser Thr His Arg Leu Tyr Ser 115 120 267 Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu Gly Leu Asn Gly Leu 268 130 135 140 270 Tyr Val Ala Leu Ala Leu Ala Ser Glu Arg Val Ala Leu Ala Leu Ala 271 145 155 150 273 Gly Leu Leu Tyr Ser Thr His Arg Leu Tyr Ser Gly Leu Gly Leu Asn 165 170 276 Ala Leu Ala Ser Glu Arg His Ile Ser Leu Glu Gly Leu Tyr Gly Leu 190 180 185 279 Tyr Ala Leu Ala Val Ala Leu Pro His Glu Ser Glu Arg Gly Leu Tyr 280 195 200 282 Ala Leu Ala Gly Leu Tyr Ala Ser Asn Ile Leu Glu Ala Leu Ala Ala

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	225					230			1		235					240
		Ivr	Ser	Leu	Tyr	Ser	Gly	Leu	Gly	Leu	Pro	His	Glu	Pro	Arq	Thr
284					245		1		- 1	250					255	
	His	ira	Ala	Ser		Len	Glu	Læu	Tvr		Pro	Ara	G1v	Leu	Glv	Leu
242	.112	. 12 9	ritu	260	110	204	314		265	0.51		,	311	270	J = 1	
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295	*141	niu	275	,110	1	111.4	311	280	11.511	311	Dea		285			200
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	Arg	СТУ	Leu	Pro	Arg	ЭΙУ	Leu		Leu	Ala						
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320	1				5					10					15	
342		Ser	Gly		_	Leu			Glu	10				Ala	15	
342 343	Tyr			20	Tyr		Glu	Ser	Glu 25	10 Arg	Leu	Tyr	Ser	Ala 30	15 Leu	Ala
342 343 325	Tyr		Ser	20	Tyr		Glu	Ser Leu	Glu 25	10 Arg	Leu	Tyr	Ser Leu	Ala 30	15 Leu	Ala
342 343 325 326	T∵r Leu	Tyr	Ser 35	20 Gly	Tyr Leu	Val	Glu Ala	Ser Leu 40	Glu 25 Val	10 Arg Ala	Leu Leu	Tyr Ala	Ser Leu 45	Ala 30 Ala	15 Leu Ala	Ala Leu
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342 323 325 326 328 329	Tyr Leu Ala	Tyr Ala 50	Ser 35 Leu	20 Gly Ala	Tyr Leu Gly	Val Leu	Glu Ala Leu 55	Ser Leu 40 Tyr	Glu 25 Val Ser	10 Arg Ala Thr	Leu Leu His	Tyr Ala Arg 60	Ser Leu 45 Leu	Ala 30 Ala Tyr	15 Leu Ala Ser	Ala Leu Gly
342 323 325 326 328 329	Tyr Leu Ala	Tyr Ala 50	Ser 35	20 Gly Ala	Tyr Leu Gly	Val Leu	Glu Ala Leu 55	Ser Leu 40 Tyr	Glu 25 Val Ser	10 Arg Ala Thr	Leu Leu His	Tyr Ala Arg 60	Ser Leu 45 Leu	Ala 30 Ala Tyr	15 Leu Ala Ser	Ala Leu Gly Ala
342 323 325 326 328 329 331 332	Tyr Leu Ala Leu 65	Tyr Ala 50 Asn	Ser 35 Leu Gly	20 Gly Ala Leu	Tyr Leu Gly Tyr	Val Leu Val 70	Glu Ala Leu 55 Ala	Ser Leu 40 Tyr Leu	Glu 25 Val Ser Ala	10 Arg Ala Thr Leu	Leu Leu His Ala 75	Tyr Ala Arg 60 Gly	Ser Leu 45 Leu Leu	Ala 30 Ala Tyr Ala	15 Leu Ala Ser Leu	Ala Leu Gly Ala 80
342 323 325 326 328 329 331 332	Tyr Leu Ala Leu 65	Tyr Ala 50 Asn	Ser 35 Leu	20 Gly Ala Leu	Tyr Leu Gly Tyr	Val Leu Val 70	Glu Ala Leu 55 Ala	Ser Leu 40 Tyr Leu	Glu 25 Val Ser Ala	10 Arg Ala Thr Leu	Leu Leu His Ala 75	Tyr Ala Arg 60 Gly	Ser Leu 45 Leu Leu	Ala 30 Ala Tyr Ala	15 Leu Ala Ser Leu Ser	Ala Leu Gly Ala 80
342 343 325 326 328 329 331 332 334 335	Tyr Leu Ala Leu 65 Ala	Tyr Ala 50 Asn Leu	Ser 35 Leu Gly Ala	20 Gly Ala Leu Gly	Tyr Leu Gly Tyr Leu 85	Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu	Ser Leu 40 Tyr Leu Tyr	Glu 25 Val Ser Ala	10 Arg Ala Thr Leu Thr 90	Leu His Ala 75	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Leu	Ala 30 Ala Tyr Ala	15 Leu Ala Ser Leu Ser 95	Ala Leu Gly Ala 80 Gly
342 343 325 326 328 329 331 332 334 335	Tyr Leu Ala Leu 65 Ala	Tyr Ala 50 Asn Leu	Ser 35 Leu Gly	20 Gly Ala Leu Gly	Tyr Leu Gly Tyr Leu 85	Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu	Ser Leu 40 Tyr Leu Tyr	Glu 25 Val Ser Ala	10 Arg Ala Thr Leu Thr 90	Leu His Ala 75	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Leu	Ala 30 Ala Tyr Ala	15 Leu Ala Ser Leu Ser 95	Ala Leu Gly Ala 80 Gly
342 343 325 326 328 329 331 332 334 335 337 338	Tyr Leu Ala Leu 65 Ala Leu	Tyr Ala 50 Asn Leu Gly	Ser 35 Leu Gly Ala Leu	20 Gly Ala Leu Gly Tyr 100	Tyr Leu Gly Tyr Leu 85 Val	Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu Leu	Ser Leu 40 Tyr Leu Tyr Leu	Glu 25 Val Ser Ala Ser Glu 105	10 Arg Ala Thr Leu Thr 90 Thr	Leu His Ala 75 His	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Val	Ala 30 Ala Tyr Ala Tyr Ala 110	15 Leu Ala Ser Leu Ser 95 Leu	Ala Leu Gly Ala 80 Gly Gly
342 343 325 326 328 329 331 332 334 335 337 338	Tyr Leu Ala Leu 65 Ala Leu	Tyr Ala 50 Asn Leu Gly Tyr	Ser 35 Leu Gly Ala Leu Ser	20 Gly Ala Leu Gly Tyr 100 Glu	Tyr Leu Gly Tyr Leu 85 Val	Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu His Ala 75 His Tyr Arg	Tyr Ala Arg 60 Gly Arg Arg Leu	Ser Leu 45 Leu Leu Val	Ala 30 Ala Tyr Ala Tyr Ala 110	15 Leu Ala Ser Leu Ser 95 Leu	Ala Leu Gly Ala 80 Gly Gly
342 323 325 326 328 329 331 332 334 335 337 338 340 341	Tyr Leu Ala Leu 65 Ala Leu	Tyr Ala 50 Asn Leu Gly Tyr	Ser 35 Leu Gly Ala Leu Ser 115	20 Gly Ala Leu Gly Tyr 100 Glu	Tyr Leu Gly Tyr Leu 85 Val	Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly 120	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu His Ala 75 His Tyr	Tyr Ala Arg 60 Gly Arg Arg Leu	Ser Leu 45 Leu Leu Val Tyr 125	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser	15 Leu Ala Ser Leu Ser 95 Leu Gly	Ala Leu Gly Ala 80 Gly Gly Leu
342 323 325 326 328 329 331 332 334 335 337 338 340 341	Tyr Leu Ala Leu 65 Ala Leu	Tyr Ala 50 Asn Leu Gly Tyr	Ser 35 Leu Gly Ala Leu Ser	20 Gly Ala Leu Gly Tyr 100 Glu	Tyr Leu Gly Tyr Leu 85 Val	Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly 120	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu His Ala 75 His Tyr	Tyr Ala Arg 60 Gly Arg Arg Leu	Ser Leu 45 Leu Leu Val Tyr 125	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser	15 Leu Ala Ser Leu Ser 95 Leu Gly	Ala Leu Gly Ala 80 Gly Gly Leu
342 323 325 326 328 329 331 332 334 335 340 341 343 344	Tyr Leu Ala Leu 65 Ala Leu Leu Gly	Tyr Ala 50 Asn Leu Gly Tyr Leu 130	Ser 35 Leu Gly Ala Leu Ser 115 Tyr	20 Gly Ala Leu Gly Tyr 100 Glu Val	Tyr Leu Gly Tyr Leu 85 Val Arg	Val Leu Val 70 Tyr Ala Ala	Glu Ala Leu 55 Ala Leu Leu Arg Val 135	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr His	Leu His Ala 75 His Tyr Arg	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140	Ser Leu 45 Leu Leu Val Tyr 125 Gly	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val
342 323 325 326 328 329 331 332 334 335 340 341 343 344	Tyr Leu Ala Leu 65 Ala Leu Leu Gly	Tyr Ala 50 Asn Leu Gly Tyr Leu 130	Ser 35 Leu Gly Ala Leu Ser 115	20 Gly Ala Leu Gly Tyr 100 Glu Val	Tyr Leu Gly Tyr Leu 85 Val Arg	Val Leu Val 70 Tyr Ala Ala	Glu Ala Leu 55 Ala Leu Leu Arg Val 135	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr His	Leu His Ala 75 His Tyr Arg	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140	Ser Leu 45 Leu Leu Val Tyr 125 Gly	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val
342 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145	Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Ser 35 Leu Gly Ala Leu Ser 115 Tyr	20 Gly Ala Leu Gly Tyr 100 Glu Val	Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Val Leu Val 70 Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala	Leu His Ala 75 His Tyr Arg Ile Leu 155	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160
342 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145	Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Ser 35 Leu Gly Ala Leu Ser 115 Tyr	20 Gly Ala Leu Gly Tyr 100 Glu Val	Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Val Leu Val 70 Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala	Leu His Ala 75 His Tyr Arg Ile Leu 155	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160
342 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145	Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Ser 35 Leu Gly Ala Leu Ser 115 Tyr	20 Gly Ala Leu Gly Tyr 100 Glu Val	Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Val Leu Val 70 Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala	Leu His Ala 75 His Tyr Arg Ile Leu 155	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160
342 323 325 326 328 329 331 332 334 335 341 343 344 346 347 349 350	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145 Leu	Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Ser 35 Leu Gly Ala Leu Ser 115 Tyr	20 Gly Ala Leu Gly Tyr 100 Glu Val His	Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg His 165	Val Leu Val 70 Tyr Ala Ala Leu Thr 150 Arg	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His Leu	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly 170	Leu His Ala 75 His Tyr Arg Ile Leu 155 Leu	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala Gly	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala Asn	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val 175	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160 Ala
342 323 325 326 328 329 331 332 334 335 341 343 344 346 347 349 350	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145 Leu	Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Ser 35 Leu Gly Ala Leu Ser 115 Tyr Thr	20 Gly Ala Leu Gly Tyr 100 Glu Val His	Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg His 165	Val Leu Val 70 Tyr Ala Ala Leu Thr 150 Arg	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His Leu	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly 170	Leu His Ala 75 His Tyr Arg Ile Leu 155 Leu	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala Gly	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala Asn	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val 175	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160 Ala

Use of nland or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa

VERIFICATION SUMMARY

DATE: 02/27/2002 PATENT APPLICATION: US/09/446,628 TIME: 13:28:33

Input Set : A:\164334.app

Output Set: N:\CRF3\02272002\1446628.raw

```
L:44 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
 L\!:\!681\ M\!:\!341\ W\!:\! (46) "n" or "Xaa" used, for SEQ ID#:11
L:682 M.341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:683 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:684 M.341 W. (46) "n" or "Xaa" used, for SEQ ID#:11
L:687 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:690 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L\colon\!691\ M\colon\!341\ W\colon\ (46) "n" or "Xaa" used, for SEQ ID#:11
L:694 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:699 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:70i\ M:341\ W.\ (46) "n" or "Xaa" used, for SEQ ID#:11
L:708 M 341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:710 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:713 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:714 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:715 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:741 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L\colon 922 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:924 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L(925~\mathrm{M}(341~\mathrm{W})) "n" or "Xaa" used, for SEQ ID#:13
L\!:\!926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:989 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:990 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:992 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1002 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1006 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1042 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:1043 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:1065 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:1069 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:1087 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:1117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:1190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1192 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1193 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1209 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
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